

# Climate Change as a Catalyst for Environmental Migration: International Challenges to Accommodate Environmental Refugees<sup>1</sup>

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## Abstract

Climate change has become one of the most prominent issues threatening environmental and human security, with environmental migration being one of its major consequences. This forces many individuals to leave their regions due to natural disasters such as droughts and floods, making migration a global issue that calls for a coordinated international response. In this context, countries, especially those in the Global South, face significant challenges in accommodating environmental refugees. This issue puts pressure on asylum systems, which are often ill-equipped to handle large numbers, and international laws regarding environmental refugees are still lacking, making it difficult to protect these individuals. Despite these challenges, this phenomenon presents an opportunity for international cooperation in formulating sustainable migration policies based on human rights, such as establishing mechanisms for adaptation to climate change and creating safe zones. This research focuses on studying the challenges of environmental migration and how to address them, with an emphasis on providing legal protection for environmental refugees. It also points out that solutions require international cooperation and the development of sustainable migration policies that include mechanisms for adapting to climate change and providing safe areas.

**Keywords:** Climate change, environmental migration, environmental refugees, international challenges, accommodation.

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## **Introduction**

The modern world is witnessing unprecedented environmental transformations due to accelerating climate change, which is increasingly impacting the environment and human societies in a clear manner. Climate change does not only affect environmental degradation, but it also causes the widespread phenomenon of forced migration, where people are compelled to leave their lands due to environmental disasters. As this crisis worsens, it has become essential to understand the relationship between climate change and environmental migration while examining the challenges faced by the international community in accommodating environmental refugees. In this context, this research aims to study how the international community is dealing with this issue and to offer suggestions for accelerating international cooperation to find effective solutions to this crisis.

### **Importance of the Research:**

Environmental migration has become one of the most important global issues in recent times. Increasing natural disasters caused by climate change affect millions of individuals living in areas vulnerable to flooding, drought, or other environmental catastrophes. Therefore, the importance of this research lies in shedding light on the role of climate change as a major factor driving environmental migration, as well as the challenges the international community faces in providing adequate solutions to accommodate and protect environmental refugees. The research also discusses the role of international agreements and environmental policies in addressing this issue.

### **Research Objectives:**

This topic has been explored to achieve several objectives, including:

- Analyzing the impacts of climate change on environmental migration: This includes studying how climate changes affect the environment and human societies, contributing to an increase in environmental migration movements.
- Exploring international challenges in accommodating environmental refugees: This involves presenting the difficulties faced by host countries and international organizations in providing support and protection for environmental refugees.
- Reviewing policies proposed to address environmental migration: This includes analyzing current international policies while highlighting the gaps in the legal frameworks related to environmental refugees and the possibility of improving them.
- Providing suggestions to enhance international cooperation in addressing the environmental crisis: This involves proposing solutions that could be effective in strengthening cooperation between countries and international organizations to provide legal protection and humanitarian aid.

### **Research Problem:**

Based on the above, the following research problem can be formulated: What is the extent of climate change's impact in stimulating environmental migration, and what are the challenges faced by the international community in accommodating environmental refugees?

#### **Research Hypothesis:**

Climate change is one of the main drivers of environmental migration, and the international community faces significant challenges in providing legal and humanitarian solutions for environmental refugees, especially in the absence of a comprehensive legal framework for their protection.

#### **Research Methodology:**

To analyze this topic, a set of appropriate research methodologies can be used, which will help in studying the subject from various perspectives. The following are the main methodologies that can be employed:

- **Historical Method:** This method is used to study the evolution of environmental migration over time and the impact of climate changes and natural disasters on population movements. By analyzing historical events that led to the displacement of communities due to environmental hazards like floods and droughts, this method helps draw lessons for guiding future policies and enhances understanding of the effects of environmental changes over time.

- **Descriptive Analytical Method:** This method involves gathering data and analyzing the economic and social factors that influence environmental migration, aiming to understand the number of environmental refugees and their impact on host countries, including economic and social effects. It provides a deeper understanding of the consequences of environmental migration and aids in identifying policies and strategies to address this phenomenon.

- **Comparative Method:** This method is employed to compare environmental migration cases in different countries and regions to understand the policies in place. By comparing countries that face environmental migration with different policies to accommodate environmental refugees, this method offers solutions based on successful experiences from various countries, helping improve international policies to tackle environmental challenges.

#### **Research Structure:**

The research addresses several key topics, with the first chapter focusing on the relationship between climate change and environmental migration, where the impact of climate disasters on individual movements will be studied. The second chapter discusses the challenges of international cooperation in accommodating environmental refugees, including political and economic barriers. The third chapter highlights the international legal framework for protecting environmental refugees, with a focus on the absence of specific legislation for them. Finally, the role of international organizations in addressing the environmental migration crisis through cooperation, coordination, and humanitarian assistance is examined.

## **1. The Relationship between Climate Change and Environmental Migration:**

Climate change is one of the most significant issues threatening environmental and human security today due to its impact on environmental migration, which is one of the most important negative consequences affecting the lives of millions of people around the world.

### **1.1 Definition of Environmental Migration:**

Environmental migration refers to the movement of individuals due to environmental changes caused by natural disasters or climate change. In this case, individuals do not migrate due to armed conflicts or political persecution, but because of environmental degradation and the depletion of natural resources they depend on for survival. Environmental migration can be internal, where people move within the same country, or international, where individuals' cross-national borders in search of better living conditions. Some climate change impacts are likely to cause forced displacement due to sudden disasters or long-term climate shifts that affect environmental conditions and essential resources.

In general, the concept of environmental migration refers to the movement of individuals or groups due to environmental changes caused by natural disasters or climate change. These disasters include phenomena such as floods, droughts, desertification, and extreme weather events, which have become more frequent and severe in recent years due to global climate changes. These disasters not only affect the environment and natural resources but also lead to large-scale changes in human migration patterns, forcing many people to leave their areas in search of more stable living conditions.

Therefore, communities suffering from environmental degradation face significant pressures, as these changes lead to shortages of basic resources such as freshwater and arable land, as well as rising sea levels that threaten coastal areas. This can lead to internal migration, where people move to other regions within the same country, or international migration, where they seek safer areas for a better future.

In addition to sudden natural disasters, there are also slow-onset environmental phenomena such as desertification and coastal erosion, which gradually displace populations due to long-term environmental degradation. Consequently, environmental migration has become an increasing phenomenon that reflects the direct and indirect impacts of climate change on human life, requiring a coordinated response at both the international and local levels to mitigate the effects of this phenomenon and achieve adaptation to environmental changes.

The causes of environmental migration are diverse, and include:

**1.1.1. Climate Change:** Rising temperatures, desertification, and rising sea levels, which lead to the loss of coastal areas or agricultural land.

**1.1.2 Natural Disasters:**

Natural disasters such as earthquakes, floods, hurricanes, or droughts, which lead to the destruction of crops or the degradation of agricultural land, are major drivers of environmental migration. These events can cause people to leave their homes in search of safer areas, as the destruction of livelihoods and the depletion of resources force individuals to move.

### **1.1.3 Loss of Natural Resources:**

The depletion of natural resources, such as freshwater, fertile agricultural land, or other natural resources that individuals rely on for daily survival, can significantly affect migration patterns. When these resources become scarce or unavailable, people are forced to seek new areas where these resources are more readily available.

Thus, the effects of climate change can exacerbate risks threatening both ecosystems and human communities by creating an interwoven concept of exposure and vulnerability. Climate change increases individuals' and communities' susceptibility to environmental crises, especially when combined with factors like economic difficulties or conflicts and violence. These interrelated factors amplify vulnerabilities, thereby intensifying the impact of environmental changes on people's lives and living conditions.

In this context, the International Organization for Migration (IOM) defines "environmental migrants" as individuals or groups who are forced to leave their homes due to sudden or gradual environmental changes that threaten their safety and livelihoods. This migration can be either voluntary or forced, leading to negative impacts on the social and economic status of the migrants. It can occur within the same country (internal migration) or across national borders (international migration) and may be temporary or permanent, depending on prevailing environmental and economic conditions.

Thus, environmental migration has become a growing issue in the modern era, driven by ongoing climate changes and their effects on the environment and natural resources. This issue presents significant challenges for governments and international organizations concerning environmental refugees, their rights, and the ways to support them in facing these challenges.

### **1.2. Impact of Climate Change on Environmental Migration:**

Climate change causes significant transformations in ecosystems, which directly impact individuals' lives. The following are key factors driving this impact :

- **Drought:** Drought significantly affects water sources and agriculture in various parts of the world, particularly in regions like the Sahel and parts of Southeast Asia and Central America. The Arabian Peninsula is one of the poorest regions in the world in terms of water resources, which primarily depend on groundwater and desalination of seawater. Countries like Saudi Arabia and Kuwait deplete their groundwater reserves, leading to a deterioration in water quality and increased extraction costs. Due to rising water consumption from population growth, lack of water

conservation, and increased evaporation from higher temperatures, it is predicted that the Arab world's per capita share of freshwater will decline to 460 cubic meters annually by 2025.

• **Flooding and Rising Sea Levels:** Floods resulting from heavy rainfall and rising sea levels, which force populations in low-lying coastal areas and small island communities to migrate, are some of the most dangerous outcomes of climate change that threaten coastal regions and islands. Reports indicate that the sea level has been rising by 1.8 mm annually since 1960, which is expected to submerge many populated areas in the future. The World Meteorological Organization's 2023 report on the state of climate in Latin America and the Caribbean, published on May 8, 2024, confirmed that the year was the warmest on record, with sea levels rising faster than the global average in large parts of the Atlantic Ocean. This continues to threaten coastal areas and small island nations, and the report stresses the need for increased investment in meteorological and hydrological services to improve forecasting and early warning systems. Similarly, another report by the World Meteorological Organization on April 23, 2024, stated that Asia remains the most disaster-prone region, where floods and storms caused the highest number of casualties and economic losses, with heatwaves becoming more intense. Regarding rising sea levels, studies indicate that the Nile Delta will experience a sea level rise of up to 50 cm by 2025, leading to the displacement of approximately 2 million people due to flood risks.

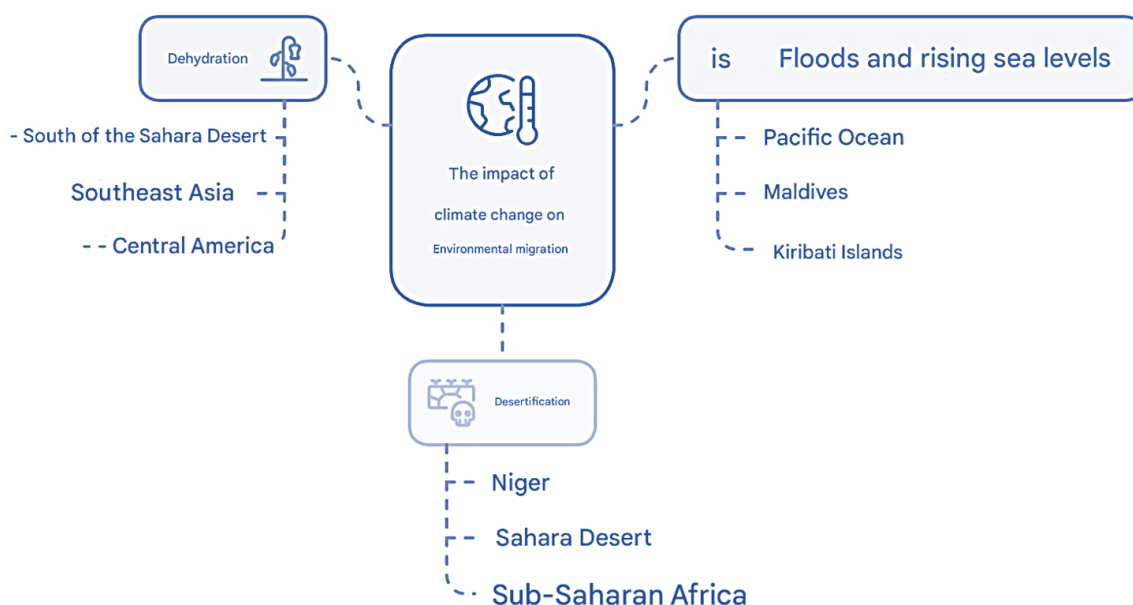
• **Drought and Water Scarcity:**

Increasing drought conditions lead to the degradation of agricultural lands and heightened water scarcity, which negatively impacts food security and livelihoods in many regions such as Syria and the Horn of Africa (Ethiopia, Somalia, Kenya). These areas are regularly exposed to drought due to climate change. According to the *Environment and Development* magazine, under the title "Arab Spring... Autumn of the Environment," the prolonged drought in Syria between 2006 and 2011 severely affected 60% of agricultural lands, resulting in a sharp decline in crop yields and significant losses in livestock. This situation exacerbated extreme poverty for over three million people and led to food insecurity, forcing thousands to migrate and contributing to pressure on the country, which in turn fueled revolutions and conflicts.

Desertification is a long-term threat that exacerbates environmental crises in many parts of the world, especially in the Sahel and the sub-Saharan regions of Africa, such as Niger, which is highly affected by desertification due to rising temperatures and recurrent droughts. These changes have led to the degradation of agricultural lands, which in turn affected food security, forcing rural communities to migrate to large cities or even leave their home countries. According to a report from the World Meteorological Organization (WMO) in 2024, the year 2024 was confirmed to be the hottest on record since the beginning of temperature tracking, based on six international data sets. The global average surface temperature reached 1.55°C.

In this context, survey results indicate that the main causes of environmental degradation include poor environmental management, non-compliance with environmental laws, weak environmental institutions, and insufficient government spending on environmental issues. Participants from Saudi Arabia and the UAE also highlighted limited environmental awareness as a major cause of these problems. As a result, it is likely that all regions of the world will be negatively affected by climate change, with escalating humanitarian crises potentially arising from food shortages due to a lack of clean water, the spread of diseases, and the possibility of conflicts.

**Figure (01): Representation of the Impact of Climate Change on Environmental Migration**



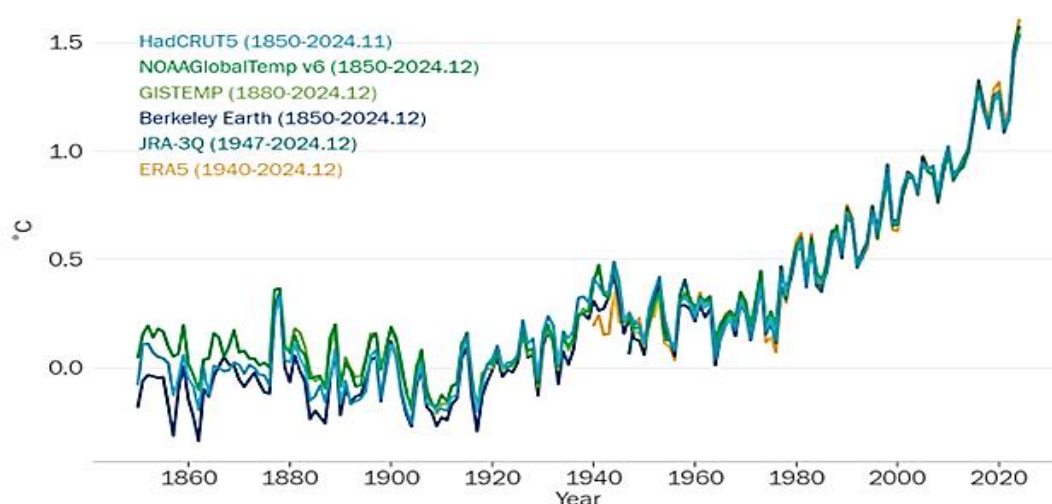
### 1.3. The Effects of Environmental Migration on Receiving Countries:

Environmental migration places significant pressure on receiving countries, particularly those that lack the necessary infrastructure to accommodate environmental refugees. These effects and pressures include the following:

- **Pressure on resources:** Increased demand for water, food, energy, and housing in receiving areas.
- **Social and economic tensions:** Increased mass migration may spark social and economic conflicts in receiving areas, especially if these areas are already facing resource shortages.
- **Job opportunities:** Receiving countries may experience a decline in job opportunities due to the increased population.

**Figure (02):** Represents the global average temperature (1850-2024).





**Source:** World Meteorological Organization. The World Meteorological Organization confirms that 2024 is the hottest year ever, approximately 1.55°C above pre-industrial levels, January 2025. Available at the following link :

<https://wmo.int/ar/media/news/almnzmt-alalmyt-llarsad-aljwyt-twkd-2024-hw-alam-alahr-ly-alatlaq-bnhw-155-drjt-mywyt-fwq-mstwyat-ma>

## 2. Challenges of International Cooperation in Accommodating Environmental Refugees:

Countries around the world face numerous challenges in accommodating environmental refugees, especially in areas that experience a significant increase in the number of these refugees. This section aims to study the challenges faced by international cooperation in accepting environmental refugees, including the following:

**2.1. Pressure on Infrastructure:** Most countries receiving environmental refugees, such as those in South Asia and Africa, suffer from a lack of healthcare, educational, and social infrastructure. This, combined with the increasing number of environmental migrants, leads to a significant strain on infrastructure.

**2.2. Lack of an International Legal Framework:** There is no comprehensive international legal framework that recognizes environmental refugees, making it difficult for this group to obtain the necessary legal protection. While the 1951 United Nations Refugee Convention and its 1967 Protocol provide protection for refugees fleeing armed conflicts and persecution, they do not cover environmental refugees. Additionally, migration experts and policymakers have only recently started paying attention to the relationship between migration and the environment, with little focus on their extensive connection. For example, the 2005 report by the Global Commission on Migration only briefly mentioned this issue without in-depth exploration.

**2.3. Economic Challenges:** Receiving countries face difficulties in providing the necessary resources to accommodate environmental refugees, including food, shelter, and employment

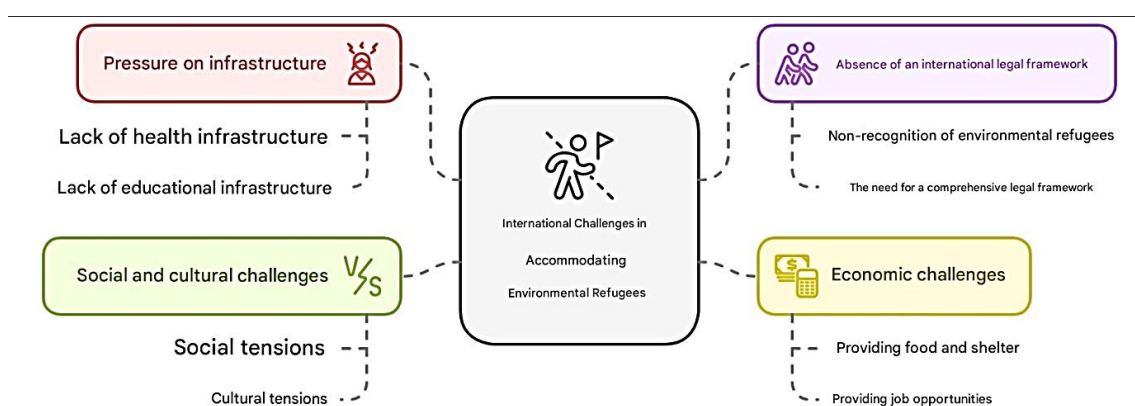


opportunities. These refugees often face tough economic conditions, which affect their social and economic stability.

**2.4. Social and Cultural Challenges:** The influx of environmental refugees in large numbers can lead to social and cultural tensions between local populations and refugees. This may result in increased local conflicts, making it harder for integration and coexistence between these groups.

In this context, the inability of many countries to adapt to climate change has contributed to the emergence of serious environmental challenges such as climate change, global warming, and the deterioration of ecosystems. The increase in urban expansion, land degradation leading to desertification, loss of vegetation, coastal and marine environmental degradation, as well as air pollution and water scarcity, have all contributed to these problems.

**Figure (03):** Represents the environmental challenges in accommodating environmental refugees.



### 3. The International Legal Framework for the Protection of Environmental Refugees:

While refugees fleeing wars and armed conflicts enjoy legal protection under the 1951 Geneva Convention, environmental refugees do not have the same level of legal protection due to the incomplete international legal framework for them.

#### 3.1. Lack of Legal Recognition for Environmental Refugees:

The 1951 Geneva Convention defines a "refugee" as "a person fleeing persecution due to race, religion, nationality, membership in a particular social group, or political opinions." The International Organization for Migration (IOM) defines a "refugee" as "an individual or group of individuals who are forced or choose, due to environmental degradation, to temporarily or permanently leave their place of residence. This definition applies to those displaced within their country or across national borders." However, environmental refugees are excluded from these definitions because they migrate due to natural disasters or climate change. This exclusion

highlights the urgent need to amend international laws to include environmental refugees. Consequently, the relationship between environmental risks caused by climate change and migration is complex and intertwined. Environmental factors accelerate migration, while migration, in turn, impacts the environment. The term "refugee" remains defined by a strict legal framework under the 1951 Geneva Convention, making it inapplicable to environmental migrants. Furthermore, neither the "United Nations Framework Convention on Climate Change" nor the "Kyoto Protocol" includes provisions for assisting or protecting individuals directly affected by climate change.

### **3.2. International Organizations and Their Support for Environmental Refugees:**

In the absence of a comprehensive international legal framework to protect environmental refugees, some international organizations, such as the International Organization for Migration (IOM) and the United Nations Development Programme (UNDP), continue to support countries facing increasing environmental migration. They are also working on developing programs to help local communities adapt to climate changes and assist countries receiving environmental refugees. However, these organizations face obstacles because they lack the legal authority to provide full protection or establish formal legal mechanisms to recognize environmental refugees in the same way that the Geneva Convention recognizes refugees from armed conflicts. In this context, the United Nations launched an initiative related to environmental refugees and presented a report titled "The Environmental Migration Report," which recommends expanding legal definitions to include environmental refugees.

### **3.3. International Attempts to Find Innovative Legal Solutions:**

Despite the lack of a specific international legal text recognizing environmental refugees, several attempts have been made to find innovative solutions in this regard. Some countries have adopted their own policies to protect environmental migrants within their national legal frameworks. Additionally, there have been regional and international initiatives calling for new legislation that recognizes environmental refugees. Among these attempts:

- **The Nairobi Declaration of 2010:** Which included calls for the creation of an international legal framework to address issues related to environmental refugees.
- **The French Law on the Protection of Environmental Refugees (2017):** France passed a law allowing those affected by climate change to receive "environmental protection," a step towards recognizing the rights of environmental refugees, albeit with limited scope.

### **3.4. The Paris Agreement on Global Climate Change (2015):**

This international agreement focuses on reducing gas emissions and mitigating climate change. Although it does not directly address the issue of environmental refugees, it serves as an international foundation for combating climate change, the primary driver of environmental migration. Under this agreement, wealthy nations can provide financial and technical support to

developing countries facing large influxes of environmental refugees, thus enhancing cooperation between countries in this context.

### • 3.5. Kyoto Protocol:

By 1995, countries began negotiations to enhance the global response to climate change, and two years later, the Kyoto Protocol was adopted. This protocol legally obliges developed countries to meet targets for reducing emissions. The first commitment period of the protocol began in 2008 and ended in 2012, while the second period began on January 1, 2013, and was expected to end in 2020. Currently, the agreement has 197 parties, with 192 parties participating in the Kyoto Protocol.

### 3.6. Issues of the Right to Return and Mobility:

One of the major challenges faced by environmental refugees is the issue of return. In many cases, those affected by environmental disasters cannot return to their original areas because these areas have become uninhabitable or completely destroyed. For example, the lands affected by rising sea levels in the Maldives are facing an increasing threat, making it impossible for their residents to return to their homes. This highlights that climate change can create a permanent state of environmental migration.

Therefore, while there have been some legal attempts to protect environmental refugees, the current situation remains inadequate. This underscores the need for an official international law recognizing environmental refugees to ensure their rights and protect them from the devastating effects of climate change. By strengthening international cooperation and developing innovative legal and human rights policies, the international community can work towards providing legal protection for these refugees who face climate challenges threatening their lives.

**Figure (04):** Represents the international legal framework for the protection of environmental refugees.



**Conclusion:**

Climate change is not merely an environmental threat; it is a complex humanitarian crisis that intertwines social, economic, and political factors, forcing millions of individuals to leave their homes in search of safety and essential resources threatened by escalating natural disasters. It represents a real challenge not only for the affected countries but also for the world as a whole. With the intensification of this phenomenon, there is an increasing need to find coordinated solutions between governments and international organizations to ensure an effective response that respects human rights and adheres to international laws.

In this context, the challenges of accommodating environmental refugees require a comprehensive approach that includes providing legal protection, delivering humanitarian aid, and developing strategies to adapt to climate change. Hence, international cooperation becomes imperative to ensure social and environmental justice for the most affected communities and to protect the planet, which everyone shares responsibility for. The success in addressing these challenges will not only depend on immediate crisis management but also on building a sustainable future that guarantees a safe and stable environment for future generations. Based on the preceding discussions, the following results and recommendations can be presented:

**First: Results**

- The increase in environmental migration due to the worsening effects of climate change, which places more pressure on receiving countries.
- The lack of an international legal framework to protect environmental refugees, leading to the absence of their fundamental rights.
- Despite some international efforts to address this crisis, cooperation between countries remains weak and insufficient for providing effective solutions.
- Environmental migration may contribute to destabilizing regional and international stability, particularly in areas with high population density.

**Second: Recommendations**

- Updating international agreements related to the rights of environmental refugees, similar to those for traditional refugees, to ensure them legal protection.
- Financing infrastructure improvement projects in receiving countries to alleviate the pressure on these communities.
- Encouraging governments and international organizations to enhance joint cooperation to address environmental migration, especially through knowledge and resource exchange between countries to provide financial resources and logistical support to communities affected by climate change.

- Establishing rapid response mechanisms to address climate changes, supporting programs that help affected communities adapt to climate change and reduce environmental migration, such as creating safe zones for environmental refugees.

### References:

1. Barnett, J., & Webber, M. (2010). *Accommodating Migration to Promote Adaptation to Climate Change*. Wiley Interdisciplinary Reviews: Climate Change, 1(6), 819-827. <https://doi.org/10.1002/wcc.72>
2. Benfafa Kh. (2025) The role of communication media in preserving intangible cultural heritage in Algeria: Challenges and Opportunities in the Digital Age. *Science, Education and Innovations in the context of modern problems*, 8 (1), 415-438. <https://imcra-az.org/archive/356-science-education-and-innovations-in-the-context-of-modern-problems-issue-1-volviii-2025.html>
3. McLeman, R., & Smit, B. (2006). *Migration as an Adaptation to Climate Change*. Climatic Change, 76(1-2), 31-53. <https://doi.org/10.1007/s10584-005-9000-7>
4. Renaud, F. G., et al. (2011). *Control, Adaptation, and Migration: Climate Change and Environmental Refugees*. United Nations University Institute for Environment and Human Security (UNU-EHS).
5. Gemenne, F. (2011). *Why the Numbers Don't Add Up: A Review of Estimates and Predictions of People Displaced by Environmental Changes*. Global Environmental Change, 21(1), 41-49. <https://doi.org/10.1016/j.gloenvcha.2010.09.004>
6. Stern, N. (2007). *The Economics of Climate Change: The Stern Review*. Cambridge University Press.
7. Zetter, R. (2011). *The Migration-Development Nexus: Environmental Change and Migration in the Context of Climate Change and Migration Governance*. Migration and Development, 3(2), 176-195. <https://doi.org/10.1080/21632324.2011.613267>
8. World Bank. (2018). *Groundswell: Preparing for Internal Climate Migration*. The World Bank Group. <https://www.worldbank.org/en/topic/environment/brief/groundswell-preparing-for-internal-climate-migration>
9. UNHCR. (2018). *Climate Change and Displacement: The Role of Protection*. UNHCR. <https://www.unhcr.org/protection/environment/5b9f273f7/climate-change-displacement.html>